

WE CLAIM:

1. A method for inducing *in vivo* migration of progenitor cells transplanted to the brain, said method comprising the steps of:

- 5 (a) transplanting said progenitor cells to a first locus of the brain of a subject; and
(b) inducing *in vivo* migration of said transplanted progenitor cells by infusing a mitogenic growth factor at a second locus of the brain of said subject.

SUB A(12)
10 The method of claim 1, wherein said progenitor cells comprise mammalian embryonic progenitor cells.

3. The method of claim 2, wherein said first locus is in the striatum of the brain, and wherein said second locus is in the lateral ventricle of the brain.

15 4. The method of claim 3, wherein said migration of step (b) occurs towards said second locus.

5. ~~The method of claim 1, wherein said infusion of the mitogenic growth factor of step (b) does not induce differentiation of said progenitor cells.~~

20 6. ~~The method of claim 1, wherein said progenitor cells are cultured in media comprising the mitogenic growth factor prior to transplantation.~~

7. A method for inducing *in vivo* proliferation of progenitor cells transplanted to the brain, said method comprising the steps of:

- 25 (a) transplanting said progenitor cells to a locus of the brain of a subject; and
(b) inducing *in vivo* proliferation of said transplanted progenitor cells by infusing a mitogenic growth factor at or near said locus of the brain.

30 8. The method of claim 7, wherein said progenitor cells comprise mammalian embryonic progenitor cells.

9. ~~The method of claim 8, wherein said locus is in the striatum of the brain.~~

10. ~~The method of claim 9, wherein said infusion of the mitogenic growth factor of step (b) is~~
5 ~~to the lateral ventricle of the brain.~~

11. ~~The method of claim 7, wherein said infusion of EGF of step (b) does not induce~~
~~differentiation of said progenitor cells.~~

10 12. ~~The method of claim 7, wherein said progenitor cells are cultured in media comprising~~
~~the mitogenic growth factor prior to transplantation.~~

ADD A3)